

Enhanced Recovery Protocols (ERAS) in Minimally Invasive Valve Surgery for Patients with Reduced Left Ventricular Function

Johannes Petersen¹, Luisa Dolata¹, Xiaoqin Hua¹, Harun Sarwari¹, Jannik Casper¹, Maximilian Krey¹, Evaldas Girdauskas^{1,2}, Jens Brickwedel¹, Hermann Reichenspurner¹

1 - Department of Cardiovascular Surgery, University Heart & Vascular Center Hamburg, Germany; 2 - Department of Cardiothoracic Surgery, Augsburg, Germany

Introduction: The role of Enhanced Recovery After Surgery (ERAS) protocols in optimising perioperative care, particularly in cardiac surgery, is becoming increasingly important.

➤ Our study evaluated the impact of ERAS on minimally invasive valve surgery in patients with reduced left ventricular ejection fraction (LVEF) at our institution.

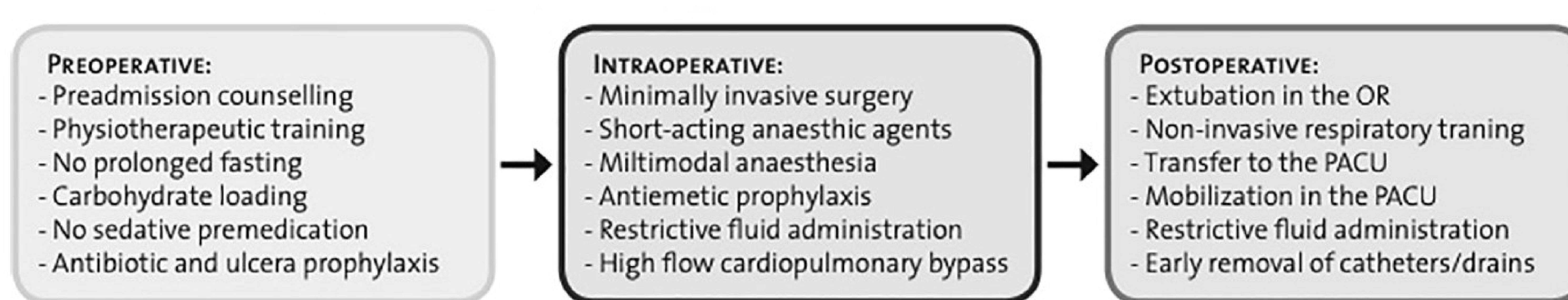
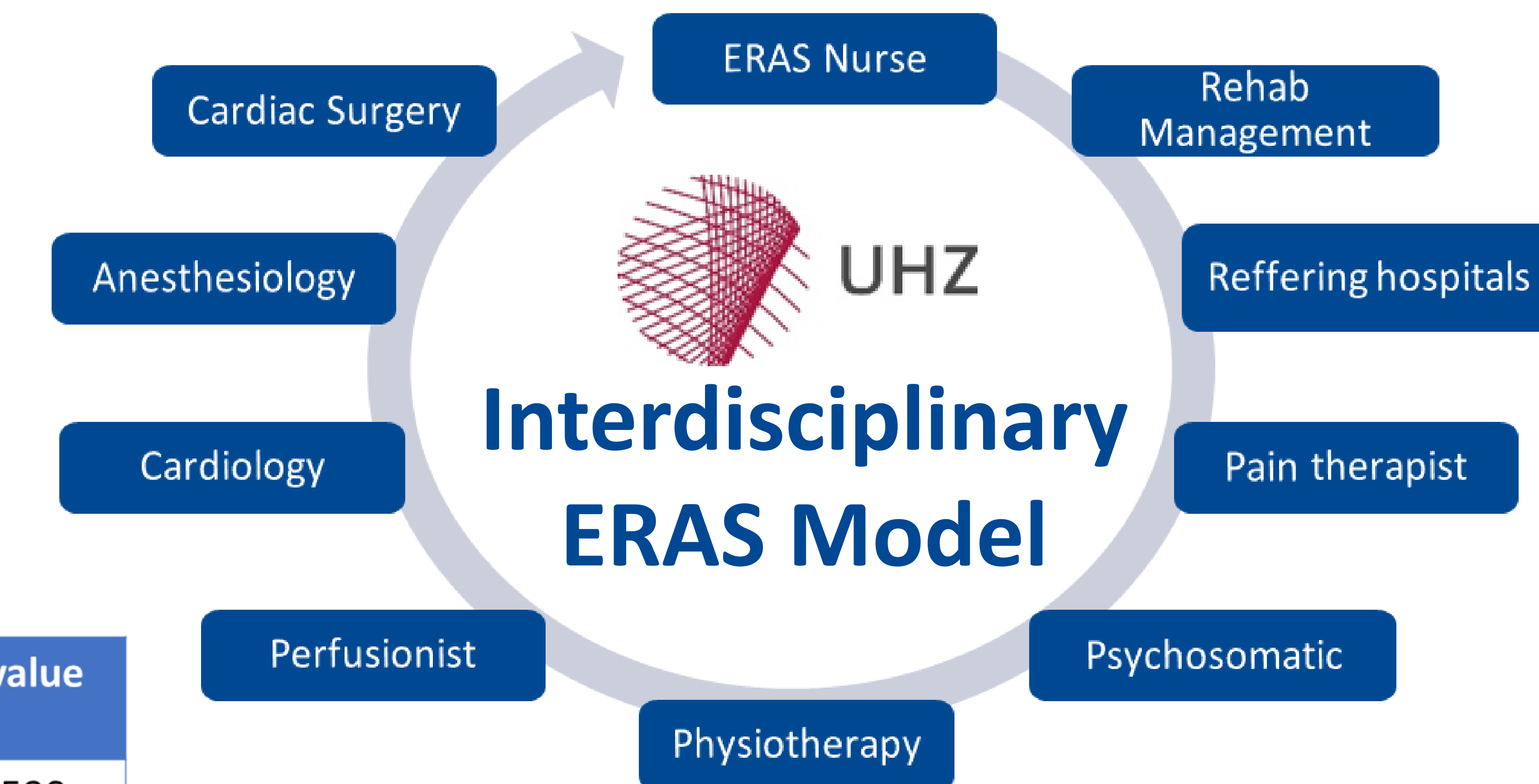


Figure: Key features of the ERAS program adapted from Kubitzz, Girdauskas et al.; (2020) *Establishment of an enhanced recovery after surgery protocol in minimally invasive heart valve surgery*. PLoS ONE 15(4)



ERAS in minimally invasive valve surgery patients
01/2018 - 07/2021
(n = 118)

LVEF ≥ 45 %
normal-EF group
(n = 107)

LVEF < 45 %
low-EF group
(n = 11)

	normal-EF group (n = 107)	low-EF group (n = 11)	p-value
Age (years)	53.4 ± 11.9	51.4 ± 12.3	0.590
STS score	0.58 ± 0.28	0.62 ± 0.46	0.653
LVEF (%)	60.3 ± 5.9%	38.7 ± 7.3%	< 0.001
Extubation in the operating room (%)	81.8	82.2	0.972
Duration of ICU stay (hours)	26.7 ± 25.6	31.5 ± 24.6	0.597
postoperative hos-pital LOS (days)	6.2 ± 2.6	6.8 ± 3.2	0.494

Complications:

- Two patients in the low-EF group (18.2%) were readmitted to the ICU for pleural effusion, while three patients in the normal-EF group (2.8%) were readmitted to the ICU; p=0.016
- There was no in-hospital or 30-day mortality in either group



Figure: Early mobilization 2 hours after cardiac surgery with physiotherapy and ERAS nurse

Conclusion:

- ERAS protocols have emerged as a valuable tool in the perioperative management of patients undergoing minimally invasive valve surgery
 - ERAS offers the potential to enhance recovery, reduce complications, elevate the overall standard of care and reduce the burden on the intensive care unit
- Our study shows that it can be safely extended to patients with com-promised left ventricular ejection fraction.